

## ABSTRACT OF THE DISCLOSURE

The invention provides an acoustic model creating method that can reduce the number of parameters and optimize the Gaussian distribution number for respective states constituting an HMM in order to create an HMM having high recognition ability. HMM sets in which the Gaussian distribution numbers of the respective states constituting the respective syllable HMMs are set from one to the maximum distribution number (the distribution number of which is 64) is trained using training speech data, and the respective states of the respective HMMs are viterbi-aligned with the training speech data corresponding to the HMMs using a syllable HMM set to the maximum distribution number among the trained syllable HMM sets. Then, a description length computing unit computes a description length for the respective states of the respective HMMs using the alignment data, and a state selecting unit selects a state having the distribution number the description length of which is minimum. Then, the respective HMMs are constructed in accordance with the states having the distribution numbers the description length of which is minimum, and an HMM retraining unit retrains these HMMs using the training speech data.